

SOME DENDROLOGIC COMMENTS ON STEYERMARK'S "FLORA OF MISSOURI"

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This magnum opus of 1800 pages, embellished by hundreds of excellent drawings, is the result of thirty years of work by Julian Alfred Steyermark, Ph.D.

Most of the descriptions do not state whether the leaves are alternate or opposite. This information can apparently be gleaned from the General Key, but only after a long search for the family. A single line beneath the name of the genus "Monoecious--dioecious--herbs--shrubs--trees--with--alternate--opposite--leaves" would have been worth while.

P. 530--Fagus grandifolia. Steyermark does not recognize the type species of the Beech in Missouri. There are nevertheless trees in southeastern Missouri with cuneate leaves like the type species. There is such a native tree 4 feet 9 inches in circumference between the driveway and a side street beside Marvin Lepchenske's home at 124 S. Locust Street, Dexter.

On p. 544 Steyermark does not recognize the variety leucophylla as distinct from Quercus falcata var. pagodaefolia. It seems to me that much of the confusion between these two varieties has come about because Ashe's description of leucophylla stated that the undersurface of the leaves was whitish (according to Deam, Trees of Indiana, p. 163). (I confess that I have had to change some of my ideas as the result of study of recently collected leaves.) It is my observation and that of others (Sargent and Moore) that the tomentulum of the undersurface of the leaves shaped like leucophylla is brownish or light grayish-russet turning brown in age. The leaves of leucophylla have fewer, broader lobes than pagodaefolia. While the two varieties often intergrade, I prefer to recognize them as distinct, as Moore has done in his Trees of Arkansas (p. 53). Some trees of leucophylla have bark like the White Oak. There are two very typical trees of this variety on the west side of Selma Street 175 feet south of Main Street in Poplar Bluff and near the southwest corner of the town hall square in Dexter.

P. 547. Steyermark does not mention the concentric circles around the apex of the acorn-nut of Quercus coccinea, which I think is the most distinctive

character of the species.

Steyermark recognizes Q. coccinea var. tuberculata, but expresses a little skepticism, as if he had not seen the variety in Missouri. There are two well marked trees in Dr. A. L. May's yard in the 1100 block of Cynthia Street in Poplar Bluff, which have tuberculate acorn-cups 25-28 mm. wide. There should be no doubt about the distinctiveness of tuberculata in Missouri, Illinois, etc.

I think that the occurrence of Quercus Nuttallii (p. 551) in Missouri should be investigated. I explored Mud Creek on November 8, 1964, but could not find anything that looked like Q. Nuttallii. I had been informed that the late Joe Adamson's property was owned by Leland Linvil, but local residents gave me conflicting information about where Mr. Linvil lived. If any living person has actually seen Nuttallii, identified by leaves and acorns, anywhere in Missouri or Arkansas during the past decade, I should like to be informed of the exact location. I have seen much misinformation about it and instances of confusion with coccinea and palustris.

I found it well-nigh impossible to convince Steyermark of anything about a hybrid Oak. I gave him a photograph, leaves and acorns from a very good specimen of Q. Xtridentata just south of Swope Park in Kansas City (now owned by Minnie Nutting of Malta Bend, Mo.), which is the Missouri champion shown on p. lxxxii, but he blandly states on p. 542 that this hybrid is "known definitely only from Cape Girardeau Co."

I gave him leaves and acorns from five specimens of Q. Xmutabilis in Miquoria. He shows its occurrence in Mississippi Co. on p. 550 and does not mention my name. See PHYTOLOGIA 6:374-378.

In Map 763 on p. 538 "Quercus XHillii" should read "Quercus XSchuettei," the name approved by him. There is another inconsistency here,--squares are shown for this hybrid in Jackson, Johnson and St. Clair Counties, but in the text he says XSchuettei is found only in St. Clair County. Just recently I found a new champion in Swope Park, Kansas City, Jackson Co., with a circumference of 5 feet 9 inches and a height of 66 feet.

In Map 766 on p. 540 the "x" for Quercus XEgglestonii should be spotted in Jackson Co. instead of Bates Co.

Since this book was compiled, I have described in PHYTOLOGIA Q. Xdiscreta (Shumardii X velutina), Q.

Xmegaleia (lyrata X macrocarpa) and Q. Xriparia (rubra X Shumardii Schneckii) from Missouri. I recently described in PHYTOLOGIA 9:488-495 Q. Xcolumnaris (palustris X rubra) from a tree now in Chicago; on p. 547 Steyermark mentions this hybrid as having been found in Osage and Benton Cos.

As Steyermark states on p. 556, Celtis is greatly in need of a revision in Missouri.

The species occidentalis and laevigata can be distinguished in the field by their bark. The bark of occidentalis is almost entirely covered with excrescences; the bark of laevigata is lighter colored, smooth and only partly covered with excrescences.

In Miquoria there is a kind of Celtis that is distinctly shrubby and with Cornus Drummondi, Rhus radicans and Arundinaria gigantea it forms a dense understory. The specimen that I have has leaves more than twice as long as wide reaching a length of 7 cm., rounded and nearly symmetrical at the base, acuminate at the apex, 3-nerved, dull yellow green on both surfaces, scabrous above, quite thin, definitely toothed above the middle with short narrow teeth smaller than in occidentalis, the petioles, 5-7 mm. long, and the lower part of the midrib are densely villous, and the branchlets are very slender and hoary-villous. I always regarded this shrubby type of Celtis as the dwarf hackberry and it is certainly an important constituent of the Mississippi River bottoms. Steyermark, however, does not show the shrubby species tenuifolia in Map 785 as being found east of Crowley's Ridge; nor do the characters of my plant fit Steyermark's description of tenuifolia. While the vegetative characters of my plant fit his general description of laevigata except for its small size, it does not fit any of his descriptions of the varieties, so that there seems to be doubt about its identity.

#### Pages 796 to 799--PYRUS--MALUS

Steyermark uses the generic name Pyrus for the Apples and Crab Apples. Malus is the name approved in the International Code of Botanical Nomenclature, p. 195.

Steyermark shows that the anthers of ioensis and coronaria are red. This is not correct according to my observation. The anthers of all specimens of ioensis that I have observed were moderate orange yellow. There are twenty sheets of specimens of ioensis from Missouri in the herbarium of the Chicago Natural History Museum but not a single sheet shows the color of the anthers. This is a very important character that

has been generally overlooked by most taxonomists.

The color of the anthers of coronaria is also orange yellow. But the color of the anthers of lancifolia is deep pink or reddish pink.

Steyermark shows that coronaria var. coronaria is found in Clay, Jackson, Saline, Texas, Madison and Butler Counties.

There are no specimens in the herbarium of the Chicago Natural History Museum to verify this. There is a specimen from Jackson Co. labeled coronaria collected by B. F. Bush at Independence in 1899, his No. 130. The leaves are rounded at the base, 7 cm. long, 3.1. cm. wide. The specimen is obviously lancifolia.

The book shows that coronaria but not lancifolia is found in Clay Co. In September of 1963 I found a large colony of lancifolia on Rudolph Schmidt's farm in Kansas City North in Clay Co. The largest tree is a new A.F.A. champion and has a circumference of 2 feet 7 inches and a height of 20 feet. A week later I found several large trees in a lot on the west side of the 5300 block of North Winchester Avenue in Kansas City North. All these trees were typical lancifolia and could not possibly be mistaken for coronaria. It is inconceivable that anyone making a careful survey of Clay Co. could have listed coronaria without listing lancifolia.

I feel certain that coronaria var. coronaria is not found in Jackson and Clay Cos. Perhaps it is found rarely in uplands in southeastern Missouri. It is an Eastern species.

The reader is referred to my monograph on lancifolia in PHYTOLOGIA 9:108-112. I have broadened three of the characters of the Key shown on p. 111 of that article to read as shown below, based on study of additional material:

WEIGHT	CHARACTER	MALUS LANCIFOLIA	MALUS CORONARIA
5	Leaf Blades: Dimen- sions	Averaging 49% to 60% as wide as long.	Two-thirds to four-fifths as wide as long.
1	Color above	Moderate yellow green or olive green.	Dark greenish yellow or dark yellow.
7	Anthers	Deep pink or reddish pink.	Orange yellow.

Being a splitter on Crataegus, I rejoice in the 50 species that E. J. Palmer recognizes on pp. 802-822, mostly in southern Missouri, tho I know nothing about them. But in working out this genus for Gleason and Cronquist's "Manual of Vascular Plants" the same man recognized only 21 species worthy of descriptions east of the Missouri River. This condensed treatment is far too crude and inaccurate for the Chicago region, where there are at least 26 species.

The drawing of C. Marshallii, No. 3 on p. 807, is incorrect. There is typically a deep narrow sinus above the lower lobe, as shown in Gray's Manual and B&B.

I am glad that Steyermark differentiates Prunus lanata (=mexicana) from americana on pp. 856-858. I have observed for decades that the fruit of lanata is bluish--perhaps purplish blue--and different from the red fruit of americana. This difference has been ignored and misstated in many books.

In describing the Pumpkin Ash on p. 1179 Steyermark does not mention the length of the calyx on the samaras, which is 6 mm. in Miquoria (when they can be found), contrasted with 1 mm. for the Green Ash. There seems to be an introgressive hybridization of the Pumpkin Ash into the Green Ash in Miquoria. In 1957 I found a Pumpkin Ash 90 feet tall near the entrance with samaras on one side of the tree like the Pumpkin Ash and on the other side like the Green Ash. Where xenogamy takes place in the Melioides Subsection of Fraxinus, the fruit is not very reliable.